

IN THE CLAIMS

1. (cancelled)

2. (cancelled)

3. (currently amended) A scanner as claimed in claim 1 - wherein said data stream means is operative to store data elements from each channel, retrieve the stored data elements and form said stream from the retrieved data elements.

4. (currently amended) A scanner as claimed in claim 1 - wherein said data stream means is operative to provide said stream of data elements so that said stream includes a plurality of series of data elements, the data elements within each such series being data elements from a single one of said channels.

5. (currently amended) A scanner as claimed in claim 1 - wherein said data stream means is operative to provide said stream of data elements so that series of data elements from different channels are provided in alternating sequence, with a series of data elements from one channel followed by another series of data elements from a different channel.

6. (cancelled)

7. (currently amended) A scanner comprising:

a) a plurality of input channels, each said channel comprising a signal processing and digitization circuit for digitizing signals from a respective one of a plurality of sensors; b) a signal processing and digitization circuit for digitizing signals from a plurality of sensors; c) a signal processing and digitization circuit for digitizing signals from a plurality of sensors; d) a signal processing and digitization circuit for digitizing signals from a plurality of sensors; e) a signal processing and digitization circuit for digitizing signals from a plurality of sensors; f) a signal processing and digitization circuit for digitizing signals from a plurality of sensors; g) a signal processing and digitization circuit for digitizing signals from a plurality of sensors; h) a signal processing and digitization circuit for digitizing signals from a plurality of sensors; i) a signal processing and digitization circuit for digitizing signals from a plurality of sensors; j) a signal processing and digitization circuit for digitizing signals from a plurality of sensors; k) a signal processing and digitization circuit for digitizing signals from a plurality of sensors; l) a signal processing and digitization circuit for digitizing signals from a plurality of sensors; m) a signal processing and digitization circuit for digitizing signals from a plurality of sensors; n) a signal processing and digitization circuit for digitizing signals from a plurality of sensors; o) a signal processing and digitization circuit for digitizing signals from a plurality of sensors; p) a signal processing and digitization circuit for digitizing signals from a plurality of sensors; q) a signal processing and digitization circuit for digitizing signals from a plurality of sensors; r) a signal processing and digitization circuit for digitizing signals from a plurality of sensors; s) a signal processing and digitization circuit for digitizing signals from a plurality of sensors; t) a signal processing and digitization circuit for digitizing signals from a plurality of sensors; u) a signal processing and digitization circuit for digitizing signals from a plurality of sensors; v) a signal processing and digitization circuit for digitizing signals from a plurality of sensors; w) a signal processing and digitization circuit for digitizing signals from a plurality of sensors; x) a signal processing and digitization circuit for digitizing signals from a plurality of sensors; y) a signal processing and digitization circuit for digitizing signals from a plurality of sensors; z) a signal processing and digitization circuit for digitizing signals from a plurality of sensors;

wherein the signal processing and digitization circuit of each said channel is arranged to supply said data elements as transition data elements, each such transition data element including data denoting a

transition as mark-to-space or space-to-mark and data denoting the duration of an interval between successive transitions;

(c) a signal processing and digitization circuit associated with each channel and having an output connected to the signal processing and digitization circuit of each channel, representing an optional plurality of channels to be scanned at a plurality of points along a scanning path associated with such channel;

(d) a data stream means, for accepting data elements from each channel and outputting a stream of data elements, including data elements from said plurality of channels; and

(e) a decoder operable to examine said data stream and data elements and recover information denoted by the data element in said stream.

8. (original) A scanner as claimed in claim 7 wherein the signal processing and digitization circuit of each channel includes (i) a signal processing circuit having an analog input connected to the photodetector and having an output (ii) a digitizer having an input connected to the output of the signal processing circuit.

9. (currently amended) A scanner as claimed in claim 7 wherein said data stream means includes a FIFO buffer associated with each said channel and having an input connected to the processing and digitization circuit of such channel and an output, said data stream means further including a multiplexer having inputs connected to the outputs of the FIFO buffers associated with all of said channels and an output connected to said processor.

10. (currently amended) A scanner comprising:

(a) a plurality of channels, each channel having a signal processing and digitization circuit associated therewith, each channel having an output connected to the signal processing and digitization circuit of each channel, a partially-active channel in claim 8 wherein at least one of said channels is a partially-active channel having active and inactive intervals;

(b) means for supporting the plurality of said channels so that their respective outputs are obtained as from the signal processing and digitization circuit of each channel, representing an optional plurality of

10. (original) A method as claimed in claim 9 further comprising partially activating each channel associated with each channel, said exposing means being arranged so that data elements from each such partially-active channel for at least a part of each said inactive interval do not represent meaningful data;

11. (original) A method as claimed in claim 9 further comprising digitizing data elements from each channel and supplying a stream of data elements including data elements from said plurality of channels, and wherein said data stream means is operative to provide the data elements for each said active interval of each said partially-active channel in a single series of data elements within said stream; and

12. (original) A method as claimed in claim 11 further comprising recovering data elements from each channel and recovering information denoted by the data elements in said stream.

11. (cancelled)

12. (currently amended) A method as claimed in claim 10 further comprising storing data elements from each channel, the step of forming a stream of data elements being performed by recovering said stored data elements from each channel and providing a plurality of series a plurality of series of data elements, the data elements within each such series being data elements from a single one of said channels.

13. (original) A method as claimed in claim 12 wherein said series of data elements from different channels are provided in alternating sequence in said stream of data elements, with a series of data elements from one channel followed by another series of data elements from a different channel.

14. (original) A method as claimed in claim 12 further comprising processing and digitizing the signals from each said photodetector within the channel associated with such photodetector, so that the data elements from each channel are in digital form.

15. (currently amended) A method as claimed in claim 12 or claim 13 wherein said step of forming said stream of data elements includes:

(a) receiving light impinging on a photodetector, each such channel being associated with a separate photodetector, and wherein each such channel is associated with a plurality of input channels, each such input channel being associated with a separate photodetector, and wherein each such input channel is associated with a plurality of points along a scanning path, each such point being associated with a separate photodetector, and wherein each such input channel is associated with a plurality of points along a scanning path, each such point being associated with a separate photodetector;

(b) operating each such input channel to provide data elements representing light impinging on the photodetector of such channel; A method as claimed in claim 12 wherein said data elements from each channel are transition data elements, each such transition data element including data denoting a transition as mark-to-space or space-to-mark and data denoting the duration of an interval between successive transitions for such channel;

(c) forming a stream of said data elements including data elements from a plurality of said channels; and

(d) examining said stream of data elements in a decoder and recovering information denoted by the data elements in said stream of data elements.

16. (original) A method as claimed in claim 12 wherein said data elements from each channel are mark and space values each representing light impinging on the photodetector of such channel at a given time.

17. (original) A method as claimed in claim 12 or 13 wherein each said channel is associated with a separate FIFO buffer, and wherein said step of storing data elements includes inputting the data elements from each said channel to the FIFO buffer associated with such channel in temporal order, and wherein said step of forming said data stream includes outputting samples from one of said FIFO buffers at a time.

18. (currently amended) A method as claimed in claim 11; or claim 12 or claim 13 wherein said step of forming said stream of data elements is conducted so that data elements from all of said channels are

included in said stream, and wherein only a single decoder is used to examine said stream.

19. (currently amended) A method of examining light from objects, comprising:

(a) providing a plurality of photodetectors, each associated with a separate input channel, so light from objects can be scanned by that the light impinging on each photodetector represents an optical property of objects to be scanned at a series of points along a scanning path associated with such photodetector; A method-of-examining-  
therein wherein at least one of said channels is a partially-active channel having active intervals and inactive intervals, said exposing step being conducted so that data elements from each such partially-active channel for at least a part of each said inactive interval do not represent meaningful data;

(b) operating each such input channel to provide data elements representing light impinging on the photodetector of such channel;

(c) forming a stream of said data elements including data elements from a plurality of said channels, and wherein said step of forming said stream of data elements is conducted so that the data elements for each said active interval of each said partially-active channel is provided in a single series of data elements within said stream

(d) examining said stream of data elements in a decoder and recovering information denoted by the data elements in said stream of data elements.